



**UNITED STATES DEPARTMENT OF COMMERCE**  
**Patent and Trademark Office**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/755,282 01/08/01 CHEN

S TS99-149B

EXAMINER

MM91/1108

GEORGE O. SAILE  
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MITCHELL, J.

ART UNIT

PAPER NUMBER

2822  
DATE MAILED:

11/08/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

**Office Action Summary**

Application No.

09/755,282

Applicant(s)

CHEN, SHENG-HSIUNG

Examiner

James Mitchell

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 08 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 34-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 34-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. This office action is in response to the preliminary amendment filed January 8, 2001.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 34-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. In regards to claim 34, the applicant does not disclose a passivating layer formed over a plurality of bond pads but a passivating layer formed over a conductive material wherein openings in the passivating layer define sectional areas of the *bond pad*.
5. While the applicant may be his or her own lexicographer, a term in a claim may not be given a meaning repugnant to the usual meaning of that term. See *In re Hill*, 161 F.2d 367, 73 USPQ 482 (CCPA 1947). The term "plurality of bond pads" in claims 34-39 are used by the claims to mean "the sections of the underlying conductive material that is not covered by a passivating layer but that is in contact with an overlying conductive material, which is the material that forms a direct connection with either wires, solder or the like. The sectioning of the bond pad does not create individual bond pads as the claims indicate.

#### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 34 is rejected under 35 U.S.C. 102(b) as being anticipated by Yoshioka (U.S 5,357,136).

8. Yoshioka discloses a substrate (1) with a plurality of bond pads (defined by the area of item 15 that is not covered by item 14 in contact with item 18) on said substrate, a passivating layer (14) formed over a portion of said pads with an opening to each pad, and a conductive pad (Item 19, abstract Lines 13-15) formed over said bond pads.

9. Claims 34 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Camilletti et. al. (U.S 5,693,565).

10. Camilletti discloses a substrate (10a) with a plurality of bond pads (Lines 38-39, Column 3) formed on said substrate, a silicon nitride (Line 53, Column 3) passivating layer (12a) formed over a portion of said pads (12a) with an opening to each pad, a barrier layer (15a) formed over said passivating layer and said opening, and a conductive pad (16a) formed over said bond pads.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshioka as applied to claim 34 and further in view of Camilletti.

13. Yoshioka does not show the passivating layer consisting of silicon oxide however Camilletti discloses the use of silicon oxide as a passivating layer (Lines 46-47 and 50-51, Column 3).

14. It would have been obvious to one of ordinary skill in the art to modify the device of Yoshioka by incorporating a silicon oxide passivating layer (SiO) in order to protect the device surface from contaminants as taught by Camilletti (Lines 48-49, Column 3).

15. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Camilletti as applied to claim 34 and further in view of Saran (U.S 6,232,662).

16. Camilletti does not show a tantalum nitride barrier layer, however Saran (U.S 6,232,662) utilizes a tantalum nitride barrier layer.

17. It would have been obvious to one of ordinary skill in the art to form the barrier layer of Camilletti with TaN since tantalum nitride is a well known barrier material used within bond pad structure as shown in Saran (Fig. 2,3; Line 8, Column 7; Lines 62-64, Column 8).

### ***Conclusion***

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kazuo (JP04124844), Hsuan et. al. (U.S 6252,300) and Galloway (U.S 5,886,414).

The prior art discloses in Kazuo and Hsuan the use of multiple metal layers separated by a passivating layer that are in contact with a common metal layer to form

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an improved bond pad structure, and in Galloway the use of a barrier layer between conductive layers to form a bond pad structure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Mitchell whose telephone number is (703) 305-0244. The examiner can normally be reached on M-F 10:30-8:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on (703) 308-4940. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-3230 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

jmm  
November 2, 2001

  
CARL WHITEHEAD, JR.  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800